

## INTEGRATED CIRCUIT OVER VOLTAGE PROTECTION

## ABSTRACT

An over voltage spike or surge protection principle is provided that involves an element that is positioned between a node in the circuitry and a reference voltage that performs as an insulator as voltage across the element increases and at a selectable voltage, the current at any higher voltage such as during a spike or a surge is shunted to reference or ground, the element is not damaged by the breakdown type of the effect of the shunting of the current, and then, after the duration of the high voltage excursion the element returns to the performance before the selectable voltage. The principle of the invention permits in - situ or localized over voltage protection to selected nodes throughout circuitry as well as throughout an integrated circuit including the interface with external circuitry.

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